Amendments to the claims

Claims listing (this listing replaces all previous claims listings)

144. (Previously presented) A method of automatically inspecting matter for varying composition, comprising advancing a stream of said matter through a detection station, irradiating with electromagnetic radiation a section of said stream at said station, scanning said section and determining the intensity of electromagnetic radiation of selected wavelength(s) received from portions of said stream, and obtaining detection data from said detection station, wherein said scanning is performed in respect of a plurality of discrete detection zones distributed across said stream and said determining is performed for each detection zone in respect of a plurality of said wavelengths simultaneously.

145. (Previously presented) A method according to claim 144, wherein portions of said stream comprise polymer and said plurality of wavelengths comprise a plurality of wavelength bands in the region 1.5 microns to 1.85 microns.

148. (Previously presented) A method according to claim 172, wherein each of the first and second streams at its said transverse section comprises objects distributed across the stream.

149. (Previously presented) A method according to claim 172 or 148, wherein the first and second streams are advanced in a common direction through said detection station.

150. (Previously presented) A method according to claim 172 or 148 wherein the first and second streams are advanced in respective opposite directions through said detection station.

151. (Previously presented) A method according to claim 172, and further comprising utilising the first and second detection data to separate from the respective first and second streams respective first and second fractions comprised of said constituent of said first stream and said constituent of said second stream, respectively.

152. (Previously presented) A method according to claim 151, wherein the first fraction constitutes the second stream.

153. (Previously presented) A method according to claim 172, wherein said constituent of said first stream is of substantially the same composition as said constituent of said second stream.

154. (Previously presented) A method according to claim 172, wherein said constituent of said first stream is of significantly different composition from said constituent of said second stream.

156. (Previously presented) Apparatus according to claim 175, wherein the first and second advancing means take the form of a single conveyor.

157. (Previously presented) Apparatus according to claim 156, wherein said single conveyor includes a single conveying belt.

158. (Previously presented) Apparatus according to claim 156, wherein said single conveyor has a partition extending therealong to keep the streams apart from each other.

159. (Previously presented) Apparatus according to claim 175, and further comprising returning means serving to transport to said second advancing means upstream of said station to constitute said second stream a separated-out fraction of said first stream comprised of said constituent of said first stream.

160. (Previously presented) Apparatus according to claim 173, wherein the first and second emitting means are so arranged as to extend across both of the first and second streams.

161. (Previously presented) Apparatus according to claim 160, wherein the first and second emitting means comprise a row of radiation sources.

162. (Previously presented) Apparatus according to claim 173, wherein said receiving device is so arranged as to extend across both of the first and second streams.

163. (Previously presented) Apparatus according to claim 162, wherein said receiving device comprises a radiation-reflecting device.

164. (Previously presented) Apparatus according to claim 163, wherein said reflecting device comprises a mirror which is substantially arcuate concavely in a plane parallel to a widthwise plane of the first and second streams and which is obliquely inclined to the former plane.

165. (Previously presented) Apparatus according to claim 164, wherein said mirror is part of an imaginary, substantially toroidal surface.

166. (Previously presented) Apparatus according to claim 173, wherein said receiving device comprises a multiplicity of metal-sensing means arranged so as to be discretely distributed across the first and second streams and serving to detect metal portions constituting the constituent(s) of at least one of the first and second streams.

168. (Previously presented) Apparatus according to claim 174, wherein said emitting means which serves to generate an electromagnetic field comprises an antenna extending across said stream at said metal-detection station.

169. (Previously presented) Apparatus according to claim 174, and further comprising advancing means for advancing said stream through said station said advancing means being situated between said emitting means and said receiving means for the field.

170. **(Cancelled)**

171. (Previously presented) Apparatus according to claim 174, wherein said data-obtaining means serves to construct from the detection data from said electromagnetic field sensing devices a two-dimensional simulation of said matter passing through said detection station.

172. (Previously presented) A method of automatically inspecting matter for varying composition, comprising passing through a detection station a first stream of matter, emitting detection medium to be active at a transverse section of said stream at said detection station, wherein said medium is varied by variations in the composition of said matter at said transverse section, obtaining from said detection station first detection data as to a constituent of said first stream, passing a second stream of matter through said detection station simultaneously with said first stream, emitting detection medium to be

active at a transverse section of said second stream at said detection station, wherein the latter medium is varied by variations in the composition of matter of said second stream at the latter transverse section, and obtaining from said detection station second detection data as to a constituent of said second stream, and wherein the varied medium from both of the first and second streams is received by a receiving device common to both streams.

173. (Previously presented) Apparatus for automatically inspecting matter for varying composition, comprising a detection station through which first and second streams of matter pass simultaneously with each other, first and second emitting means serving to emit detection medium to be active at respective transverse sections of said first and second streams at said detection station, a receiving device serving to receive detection medium varied by variations in the composition of said matter at said sections and thus being common to both of the first and second streams, and detecting means arranged to be in communication with said receiving device and serving to produce first detection data and second detection data as to respective constituents of said first and second streams at said station.

174. **(Currently Amended)** Apparatus for automatically inspecting a stream of matter for varying composition, comprising a detection station through which said stream passes, emitting means serving to emit a detection medium to be active at a transverse section of said stream at said station, receiving means at said station arranged to extend physically across substantially the width of said stream serving to receive detection medium varied by variations in the composition of said matter at said section, detecting means arranged to be in communication with said receiving means and serving to generate detection data in dependence upon the variations in said medium, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom, wherein said station is a metal-detection station, said emitting means serves to emit electromagnetic field and is connected to an oscillator, whereby said electromagnetic field oscillates, and said receiving means comprises a multiplicity of electromagnetic field frequency sensing devices arranged to be distributed across said stream.

175. (Previously presented) Apparatus according to claim 173 and further comprising first and second advancing means serving to advance through said station the respective first and second streams.